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Declass Review by NGA.

MONTHLY REPORT

PAR 213

1 May 64

SUBJECT: Color Reproduction Systems Review

TASK/PROBLEM

1. In view of the recent importance attached to color photography by the intelligence community, investigate and determine the most suitable means to reproduce and utilize multiple copies of color materials. Determine the most suitable reproduction system and types of equipments to be used in all phases of the reproduction cycle. Also, attempt to define how color photography can best be utilized by the photo interpreter.

DISCUSSION

2. General: The initial organization of requirements for this PAR was accomplished. The stereo pairs were chosen and mounted. The airport, gas tower, and downtown scenes of local area flights were reproduced on the Ektachrome reversal paper. The scenes were enlarged 10 diameters.

3. Printing. While following the working plan for the various system demonstration materials, it became evident that the following printing philosophy was essential: On a continuous length of multiple scenes, those scenes selected to be of prime importance will be printed at a single printer balance optimized for those scenes. The remaining frames will be allowed to fall on the reproduction material where they may. This ground rule is necessary because:

- a. To print each scene regardless of its importance in content of optimum will require color frame-by-frame printers (non-existent as of now).
- b. Color interrupted processing is not sufficiently developed for optimum processing of the original, and
- c. The prime product users may differ in the color balance and densities desired according to their respective interests.

4. Processing:

a. Some work was required to accomplish a stable ME-4 100F process using the sensitometric lab processor (Paddle Wheel). The SO-271 enlargements were processed on this machine.

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b. The reversal paper was processed on the [ ] Rapid Color Processor. The resolution and the color balance of the paper prints were poor. The printing balance, which provided natural looking snow, produced very green area.

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c. Careful pH control of the color developer is required to achieve process stability. An accurate pH meter is necessary.

d. The following exposures were made:

1. Twenty 10X on S0-271
2. Four 5X on S0-271
3. Twenty 10X on reversal paper
4. Two 5X on paper

Of these about six paper prints were considered acceptable. The quality of the aerial scenes on [ ] paper is only fair.

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e. A series of 19X exposures were processed to determine correct exposure conditions for the remaining 19X requirements.

#### PLANNED ACTIVITY

5. Next period, we will continue with efforts to evaluate the quality of flashed and unflashed transparencies on [ ] films Type 5029 and FE-3052. A black-and-white process (sink) will be set up to produce the necessary reference prints.

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6. The use of a color-internegative to color print film will be investigated as well as the possibilities of a color tri-masking system.

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